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PROJECT APPLICATION FORM – 2006

Applicant: Board of Selectmen
Applicant's Address, Phone Number and Email

Submission Date: Nov. 2005
Purpose: Recreation

Town Committee (If applicable):

Project Name: Creation of Universal Access Entryway & Trail at Acton Arboretum

Project Location/Address: Acton Arboretum

Amount Requested:

Project Summary

The Acton Arboretum is the most widely used conservation area in the Town of Acton. As the Arboretum has developed, *Universal Access* has been a consideration throughout the design process for any new collections in accordance with the Master Plan for the property. Over the past few years, the Town of Acton in cooperation with the Friends of the Acton Arboretum, Inc. has invested in capital improvements at the Arboretum, upgrading some commonly-used trails, installing boardwalks, adding features to improve safety for all visitors, and repositioning trails to meet accessibility requirements under the Americans with Disabilities Act (ADA). Even with this concerted effort, the Arboretum still falls short of providing true Universal Access.

If approved, this proposal would create a new *multifunction universal access entry* to the Arboretum from the Taylor Road parking lot accommodating walkers, wheelchair users, and maintenance trucks. It would also create a new *universal access trail* in the main portion of the Arboretum (the upper grounds), leading from the entryway to a newly created sensory garden currently being developed and to the existing trail by the butterfly garden.

This proposal creates recreational opportunities for an *under-served population* – persons with disabilities, especially the visually impaired and those in wheelchairs. The project seeks to expand the use of the Arboretum to a wider population, the visually impaired by creating trails with well-defined edges contrasting in color and texture, a goal long held by the Acton Commission on Disability. In addition, the project *meets the needs of multiple populations*, such as elderly citizens and disabled persons who need a stable surface for walking safely and those with small children in strollers.

Estimated Date for Commencement of Project:

July 2006

Estimated Date for Completion of Project:

December 2006

Project Narrative

This proposal will create a new *universal access multifunction entryway* to the Acton Arboretum from the Taylor Road parking lot accommodating walkers, wheelchair users, and maintenance trucks. It will also create a new *universal access trail* in the main portion of the Arboretum, leading from the new entryway to a newly created sensory garden and to the existing trail by the butterfly garden.

As described in the Project Summary, the project meets the needs of an underserved population – the visually impaired and other disabled people – and it meets the needs of multiple other populations – disabled or elderly people who need sure footing to enjoy a walk in nature and those pushing strollers who want to explore the outdoors with small children.

The Acton Arboretum is a specialized parcel of Acton Conservation Land, managed by the Natural Resources Department under the auspices of the Conservation Commission. The property is supported by the Acton Land Stewards. In addition, the Friends of the Acton Arboretum, Inc., a nonprofit organization, maintains many of the gardens and donates goods and services to the Town to benefit the property.

In fact, this proposal leverages funds being expended on other projects already underway by the Friends of the Acton Arboretum to enhance the overall experience at the Arboretum for persons with disabilities. It also leverages funds recently expended by the Town and the Friends of the Arboretum on the trail system for the same reason.

When the full plan is combined with the Lilac and Fragrance Gardens (currently under construction in the Arboretum by the Friends of the Arboretum using donated funds and with support from Town Staff), this project will make the Arboretum unique in the area as a destination for persons with disabilities. Accessibility to these new gardens will give the visually impaired and those in wheelchairs an opportunity to readily experience these new collections through the senses of touch and smell. The newly designed trails will also appeal to those who enjoy the outdoors but are limited by uneven terrain found in many other walking destinations.

Funds have already been secured by the Friends for a second ongoing project through a \$6,400 grant from the William P. Wharton Trust of Boston to create an annotated self-guided tour of the upper grounds for persons with disabilities. A general self-guided tour has already been completed as part of this project. The features described in this proposal will be thoroughly documented for visitors to the Arboretum through the

distribution of the second guide as part of the Friends' effort to provide information on trails, gardens, and collections in multiple formats.

The project includes two components:

- The universal access **trail**
- The universal access multifunction **entryway**

The **trail** component consists of creating approximately 1345 feet of *universal access trail* heading east from the gate by the kiosk at the Taylor Road parking lot, to the right down the hill behind existing trees towards the nature pond, and left around the outer edge of the lawn towards the Butterfly Garden. The work includes a low retaining wall along a section that must be recessed to meet the ADA slope requirements. Where a farm path leads east, the trail heads towards the farm ponds and loops back into the area of the lilac garden making a wide loop around a black walnut tree near the site of the future fragrance garden. In addition, breaks will occur at regular intervals along the trail where benches will be sited to further meet the ADA requirements.

The **trail** will be bordered by 4"x5"x9" grey granite cobbles (matching those already installed in a limited area), set end-to-end and flush with the edge of the ground, in concrete reinforced with rebar to prevent shifting when the ground is frozen or when driven over by heavy maintenance vehicles. The site will be prepped by excavating 6" to 8" of material five feet eight inches wide along the length of the trail. Landscape fabric will underlay the compacted stone dust filling the excavated trail to prevent the mixing of sub-soils and to keep the surface integrity maintenance-free for years. Landscape fabric will reduce the intrusion of weeds and grass into the trail, reducing the need for mechanical or herbicidal weed control. The trail must be smooth and level from side-to-side with the cobbles set even with the compacted stone dust in order to meet ADA requirements.

In some areas, to meet the ADA slope requirements, the trail must be dug into the hillside to achieve the proper grade and cross slope. In places where the trail cuts into the hillside, stone walls and garden beds will be built to retain the edge. In areas potentially subject to erosion from heavy rains, swales should be constructed adjacent to the uphill section of the trail to divert water and keep it from eroding the trail. In sections liable to fill with water during heavy rains or spring melt, care should be taken to raise the surface of the trail to keep it drier. In those areas, drainage swales can be installed on each side of the trail. If drainage crossings (water bars) are needed anywhere on the trail, they should be constructed of flexible material.

Places where benches will be installed will also be excavated and constructed in the same manner as the trail and edged with rubber or plastic edging. A short five foot wide trail will lead to each bench and a space three feet by six feet will also be prepared with a stone dust surface beside each bench to meet ADA requirements. Concrete footings with leg anchors for four-foot wide benches will be installed in each bench site. The cost of the benches will be underwritten by the Friends of the Acton Arboretum. Nine bench sites need to be prepared along the trail in locations described by Acton's Natural Resource Director. (One bench is already in place.)

Any areas that are dug up or disturbed by construction vehicles as part of the project, must be filled with loam and reseeded with grass where necessary to eliminate ruts created by the vehicles. If areas to be reseeded are ready close to winter, then the reseeded must occur the following spring.

Information for contractors bidding on the job will include copies of the relevant state regulations from the Architectural Access Board.

The **entryway** component will create a *universal access multifunction entry* to the Arboretum and will include a universal access walkway, a new culvert and driving surface that can support the weight of maintenance trucks and other heavy machinery, and new arched fieldstone walls with a gate to prevent unauthorized vehicle entry to the lawn while still providing a safe entrance for visitors. The surface of the universal access walkway will match the surface of the universal access trail while two 24 to 26 feet long tracks, each 24 inches wide and paved with granite cobblestones, will be set into the ground crossing the culvert so that vehicles can pass through the entryway without forming ruts. The entryway's surface surrounding the granite cobbles will be spread with loam and planted with grass. To prepare for future improvements, multiple 4" PVC conduits will be buried perpendicular to the culverts to anticipate the need for water lines, power, and communication lines into the site from the street and parking lot.

Site Control

The Acton Arboretum is Town conservation land. As such, this project will be undertaken by the Town under direction of the Natural Resources Department.

Feasibility

The work described by this project is neither complicated nor difficult to complete, although seasonal factors will dictate when the work can proceed. Because the project builds on work begun by the Town and the Friends of the Acton Arboretum, there is a knowledge base on what is needed to complete the project and how best to complete it successfully. The Friends of the Arboretum have a proven track record supporting this site and are committed to donating their time, services, and funding to the Town of Acton to support this project and to help see it through to completion.

A wetlands permit will be required to build the trail through the area of the Lilac and Fragrance Gardens. Since the Conservation Commission has already granted a permit to the Town to clear the area for the gardens, meeting this requirement should not be difficult.

Project Scope

Completing this project requires purchasing landscaping services. Materials can be purchased directly by the Town from local sources or bundled with the project and provided by the contractor. For this project, however, we will ask the contractor to provide the materials. Whenever possible, bulk materials, especially cobbles, blocks or stone, should be delivered close to the work site. For example, pallets of cobbles should be spaced along the site of the new trail. Other materials must be stored in areas designated by Town staff.

In order to estimate the overall cost of the project, we contacted local suppliers to determine what the materials would cost if purchased separately. As you can see from the following cost analysis, the cost of trail materials will exceed \$12,000. Consequently, we concluded that the cost of the complete project, landscaping services and materials, will be in excess of \$25,000. This amount will trigger the Request for Proposal process.

A local landscaping contractor is in the process of preparing a professional quote for this project to include with the final application.

Materials needed for the **trail** and **bench locations**

- 4"x4.5"x9" grey cobbles -- palletized
- Stone dust
- Gravel to fill in low areas (possibly)
- Concrete
- Rebar
- Bench anchors
- Landscape fabric (5' wide)
- Loam and grass seed
- Trail edging material for bench locations

Materials needed for the **entryway**

- Fieldstone
- Concrete footings and foundation
- Crushed rock for beneath footings
- Granite cobblestones
- Stone dust

- Loam and grass seed
- Landscape fabric
- Culvert
- 4" PVC conduit
- Gate with side supports and hardware – The metal gate must open in the center, be suspended from granite posts, and have an arched top.

Trail Cost Estimates

(without estimates to include locations for benches, and without contractor markup)

1345 feet of trail (~6725 sq. ft.*)

*area may vary from estimate when intersections are considered

Cobbles

1345 feet of trail => 1400 feet (for "fudge" factor)

1400 feet * 12 inches/foot * 2 sides = 33600 inches for 2 sides

33600 inches / 9 inches per block = 3734 blocks

@140/pallet = 27 pallets (26.67 but you have to round up)

with 3780 (27 pallets) * \$2.05 per block = \$7749

plus delivery cost of \$100 per truck load

= \$7,949 for cobbles

Landscape Fabric

5' wide x 250' long @ \$122.50 per roll

1400 feet / 250 feet/roll = 6 rolls (5.6 but you need to round up)

6 rolls x \$122.50 = \$735 for landscape fabric

Stone dust

1400' length x 5' width = 7000 square feet with a depth of 6" stone dust

Stone dust density factor = 1.6 (Aggregate Industries - Ashland/Littleton MA)

6" depth = .5

7000 sq.ft. x .5 x 1.6 = 5600 = 207 tons of material needed (or 125 ? cubic yards)

(divide square footage by 27 for cubic yard)

@\$11.00 per ton + \$2.80 per ton delivery from Littleton = \$2,857 for stone dust

Bench Site Supplies – no cost estimates included

Trail Edging – xx feet – rubber or plastic, non-corrosive edging
Concrete for footing pads
Angle bar for bench leg anchors
Landscape fabric
Stone dust

Summary of Estimated Materials Cost for Trail

<i>Cobbles</i>	<i>\$7,949</i>
<i>Landscape Fabric</i>	<i>\$ 735</i>
<i>Stone Dust</i>	<i>\$2,857</i>
<i>Bench Location Supplies</i>	<i>xxxxxx</i>
 <i>Estimate Total</i>	 <i>\$11,541</i>

Items Needed for Final Proposal

Drawing of gate
Drawing of trail
Plan of Arboretum with area of work shown and wetlands delineated

Materials estimate with bench locations
Professional cost estimate, materials and labor

Clarification of slope requirements from the MA Architectural Access Board

Architectural plans for new construction
Names and addresses of project architects, contractors, and consultants

Support from Commission on Disability and Friends of Acton Arboretum